

How to avoid an Achilles injury like NBA superstar Kevin Durant's

July 2 2019, by Whitelaw Reid



Dr. Joseph Park says a key to avoiding an Achilles injury is knowing the difference between static and dynamic stretching. Credit: University of Virginia

It was the pop felt around the world.

When Golden State Warriors superstar Kevin Durant collapsed to the court in Game 5 of the NBA Finals last month, many people watching knew right away what he had done.

Durant had sustained one of the worst injuries for any athlete: a ruptured Achilles tendon.

Immediately, talk centered around two questions: Would a team still lavish the impending free agent with a maximum contract? And would Durant ever be the same player?

On Sunday night, the first question was answered when the Brooklyn Nets signed Durant—who is expected to miss all of next season—to a four-year, \$164 million contract.

For the second question, UVA Today turned to University of Virginia School of Medicine alumnus Dr. Joseph Park, an associate professor and chief of the foot and ankle division in the UVA Health System's Department of Orthopedic Surgery, who treats athletes of all levels at UVA's Sports Medicine Clinic.

Q. Did it surprise you that the Nets and other teams weren't deterred after Durant ruptured his Achilles?

A. You have to know what his pre-injury status and pre-injury athletic capabilities were. Kevin Durant is sort of a freak-of-nature athlete to be as tall as he is and capable of playing inside and outside and have great court vision. His economic value to a team is not just his vertical leap.

If he was a six-foot-one point guard who could elevate and dunk on everybody, I would say his game has to change. Someone like [Hall-of-Fame point guard] Allen Iverson with an Achilles rupture would have

had a hard time playing the NBA, whereas somebody like Durant shoots over people.

He'll have to modify his game somewhat, but he's so multifaceted that you can understand it. I have no doubt he'll come back and still be one of the best basketball players, but will certain parts of his game be different? Definitely.

Q. NBA players don't have a great track record for coming back from these injuries, though.

A. Kobe Bryant is a great example of how this injury can alter your career. He was still an awesome athlete and had a skill set that could draw millions of dollars of support and make him the focus of an offense, but he was never going to be the same player [after his 2013 Achilles injury]. Age-wise he was coming toward the end of his career, but he had a skill set he could modify.

Still, he wasn't going to be entering the slam dunk contest. I think that's the thing.

Q. What makes the Achilles tendon tear such a devastating injury compared to, say, an anterior cruciate ligament tear in your knee?

A. The major difference has to do with the magnitude of force that is transmitted through the Achilles tendon. It's by far the strongest muscle tendon unit in the body. It sees more force than any other joint, any other muscle, any other tendon. Because it's such a heavy load-bearing tendon, the fact that it can rupture tells you something about the quality of the tendon to begin with.

With the ACL, the reason it would tear is because you are unlucky and end up putting force through your knee that the ligament just couldn't resist in that position. Most people who rupture their Achilles tendon are doing fairly benign things. It's not usually because you jumped over somebody's back trying to dunk a basketball and just landed funny. It's more like what happened with Durant—you're pushing off or trying to accelerate and you just feel a pop. The classic story is you feel like somebody shot you in the back of your leg or felt like an explosion in your calf.

Q. Have there been any new surgical techniques or advancements in treatment in the last few years?

A. In the past five years, our approach to Achilles ruptures have changed a lot. It used to be you wanted to repair every little strand of Achilles, much like you would do if you cut a flexor tendon in your hand. It would look great inter-operatively, but then post-op it would just swell up and get very thick. Over time, that swelling decreases, but it is never the right caliber and the physiology of the tendon is different.

The thing that has changed is we have gone to an approach where you can make small incisions and weave the suture where you bypass the area of the rupture itself. The goal is to provide stable tendon fixation so that we can begin early range of motion.

Q. Are there any preventive measures that weekend warriors and professional athletes alike can take to avoid the injury?

A. For those of us who try and stay active as we get older, we probably don't stretch enough throughout the day and aren't as religious about stretching as we should be.

For me as a younger person, stretching before athletics would just involve like jumping out of my car and running onto the field, and that was about it. I didn't put much thought or preparation into it.

As I've gotten older and I'm still trying to be competitive with playing tennis and that sort of thing, I can't do what I did when I was younger. If I do that now, I'm not going to be able to compete. I'm going to strain something, be sore for a week.

What I've learned from our therapists and our trainers is that it's really important before these sorts of dynamic activities to really warm up those muscle groups. Whereas before, if I did ever stretch, I would do static stretching—kind of like doing the runner's stretch where you just kind of lean over and push forward on a step. That would be what I thought of as stretching. Those kinds of stretches are aimed at gentle elongation of the tendon.

But the thing I realize now is that before you exercise, you need to do more dynamic stretching—dynamic meaning getting the muscle unit moving and stretching gradually as you're sort of warming them up with movement. I think for me that's been the biggest change—just understanding that, in order for me to do motions in whatever activity that I'm doing, I have to replicate or simulate that activity before I go on to the field or court or whatever it is.

Q. Have you seen an increase in the injury in the last few years?

A. Anecdotally, yes. It has seemed to go up, and I think it's because of a few things.

One, I think the way that we think about youth athletics has changed. We

start them younger and younger and put them in more and more competitive situations. If your kid is thought to be a good athlete, everybody wants them to do travel teams and do all-star teams and various activities. It used to be, "Oh this kid's pretty good in basketball, let's see how he does in high school." Now it's like you have to be on the best AAU team as a 9- or 10-year-old. I just think there's less rest for kids.

One of the things I really stress is that when your kids are going through their growth spurts, the bones are growing and the muscles are getting stronger, but the tendons still have to take time to get stretched out. They have to elongate gradually. Kids play year-round and there's not much down time. I think that has played a role.

Q. What should an avid runner who is starting to feel a little bit of pain or soreness in their Achilles do?

A. A lot of people don't listen to their bodies. If your Achilles is sore and you say, "I'll just run through it, I'm sure it's going to get better," it might get better, but it also might be that every time you run, you're slowly causing a little bit of extra damage to the tendon. It's always hard to know when to pull the trigger and pursue evaluation for something, but the Achilles tendon, in general, scares me because—as we talked about with Kevin Durant—he's in for a huge recovery. It's something where, a year out, he might be back on the court. But, invariably, he will lose the ability to be as dynamic and athletic as he was before the rupture.

Provided by University of Virginia

Citation: How to avoid an Achilles injury like NBA superstar Kevin Durant's (2019, July 2) retrieved 25 April 2024 from

<https://medicalxpress.com/news/2019-07-achilles-injury-nba-superstar-kevin.html>

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